

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-21. (canceled).

22. (previously presented): A group-III nitride semiconductor light-emitting device comprising a single crystal substrate, a boron phosphide (BP)-based buffer layer and a single hetero-junction light-emitting part structure, wherein the single hetero-junction light-emitting part structure containing a $\text{GaN}_{1-X}\text{P}_X$ ($0 < X < 1$) lower clad layer lying on the BP-based buffer layer, the phosphorous compositional ratio (X) of the $\text{GaN}_{1-X}\text{P}_X$ lower clad layer is set to obtain the lattice matching with the BP-based buffer layer and a $\text{Ga}_Y\text{In}_{1-Y}\text{N}$ ($0.1 \leq Y \leq 1$) light-emitting layer having a conduction type opposite the conduction type of $\text{GaN}_{1-X}\text{P}_X$ lower clad layer.

23. (currently amended): A group-III nitride semiconductor light-emitting device comprising a single crystal substrate, a boron phosphide (BP)-based buffer layer and a double hetero-junction light-emitting part structure, wherein the double hetero-junction light-emitting part structure containing a $\text{GaN}_{1-X}\text{P}_X$ ($0 < X < 1$) lower clad layer, the phosphorous compositional ratio (X) of the $\text{GaN}_{1-X}\text{P}_X$ lower clad layer is set to obtain the lattice matching with the BP-based buffer layer, a $\text{Ga}_Y\text{In}_{1-Y}\text{N}$ ($0 \leq Y \leq 1$)($0.9 \leq Y \leq 1$) light-emitting layer and an $\text{Al}_Z\text{Ga}_{1-Z}\text{N}$ ($0 \leq Z \leq 1$) upper clad layer having a conduction type opposite the conduction type of the lower clad layer.

24. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 22 or 23, wherein the lower clad layer has a dislocation density of $1 \times 10^5 \text{ cm}^{-2}$ to $1 \times 10^6 \text{ cm}^{-2}$.

25. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 22 or 23, wherein the lattice mismatch between the lower clad layer and the light-emitting layer is 0.3% at most.

26. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 22 or 23, wherein the light-emitting layer has a dislocation density of $2 \times 10^5 \text{ cm}^{-2}$ to $1 \times 10^6 \text{ cm}^{-2}$.

27. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 22 or 23, wherein the buffer layer has the lattice constant of the original crystal of the material on the buffer layer surface opposite the junction interface with the substrate and the thickness of 5 nm to 50 nm.

28. (previously presented): A group-III nitride semiconductor light-emitting device comprising a single crystal substrate, a boron phosphide (BP)-based buffer layer and a single hetero-junction light-emitting part structure, wherein the single hetero-junction light-emitting part structure containing a $\text{GaN}_{1-X}\text{P}_X$ ($0 < X < 1$) lower clad layer lying on the BP-based buffer layer

and a $\text{Ga}_Y\text{In}_{1-Y}\text{N}$ ($0.1 \leq Y \leq 1$) light-emitting layer having a conduction type opposite the conduction type of $\text{GaN}_{1-X}\text{P}_X$ lower clad layer,

wherein the degree of lattice mismatch between the BP-based buffer layer and the $\text{GaN}_{1-X}\text{P}_X$ lower clad layer is about $\pm 1\%$ or less.

29. (currently amended): A group-III nitride semiconductor light-emitting device comprising a single crystal substrate, a boron phosphide (BP)-based buffer layer and a double hetero-junction light-emitting part structure, wherein the double hetero-junction light-emitting part structure containing a $\text{GaN}_{1-X}\text{P}_X$ ($0 < X < 1$) lower clad layer, a $\text{Ga}_Y\text{In}_{1-Y}\text{N}$ ($0 \leq Y \leq 1$) ($0.9 \leq Y \leq 1$) light-emitting layer, and an $\text{Al}_Z\text{Ga}_{1-Z}\text{N}$ ($0 \leq Z \leq 1$) upper clad layer having a conduction type opposite the conduction type of the lower clad layer,

wherein the degree of lattice mismatch between the BP-based buffer layer and the $\text{GaN}_{1-X}\text{P}_X$ lower clad layer is about $\pm 1\%$ or less.

30. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 28, wherein the degree of lattice mismatch between the BP-based buffer layer and the $\text{GaN}_{1-X}\text{P}_X$ lower clad layer is about $\pm 0.4\%$ or less.

31. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 29, wherein the degree of lattice mismatch between the BP-based buffer layer and the $\text{GaN}_{1-X}\text{P}_X$ lower clad layer is about $\pm 0.4\%$ or less.

32. (previously presented): A group-III nitride semiconductor light-emitting device according to claim 22 or 23, wherein the $\text{GaN}_{1-x}\text{P}_x$ lower clad layer is a single crystal layer.